

需要确定当前视口位置应该显示的海图，并且对已经转格式为SENC的文件进行管理、即知道OpenCPN中已经安装了哪些图，能进行移除、增加等操作。实现这些功能，需要对SENC文件进行读取，但是和显示出来不同，它只需要读取一些文件头信息，比如：图范围、比例尺等，这些信息在OpenCPN中对应ChartTableEntry，ChartTableEntry被定义成一个struct，并且包含所有成员的Get方法，和读、写到文件的方法。

```
bool ChartTableEntry::Read(const ChartDatabase *pDb, wxInputStream
&is)
{
    char path[4096], *cp;

    Clear();

    // Allow reading of current db format, and maybe others
    ChartDatabase *pD = (ChartDatabase *)pDb;
    int db_version = pD->GetVersion();

    if(db_version == 17)
    {
        // Read the path first
        for (cp = path; (*cp = (char)is.GetC()) != 0; cp++);
        pFullPath = (char *)malloc(cp - path + 1);
        strncpy(pFullPath, path, cp - path + 1);
        wxLogVerbose(_T(" Chart %s"), pFullPath);

        // Create and populate the helper members
        m_pfilename = new wxString;
        wxString fullfilename(pFullPath, wxConvUTF8);
        wxFileName fn(fullfilename);
        *m_pfilename = fn.GetFullName();

        // Read the table entry
        ChartTableEntry_onDisk_17 cte;
        is.Read(&cte, sizeof(ChartTableEntry_onDisk_17));

        // Transcribe the elements....
        EntryOffset = cte.EntryOffset;
        ChartType = cte.ChartType;
        LatMax = cte.LatMax;
        LatMin = cte.LatMin;
        LonMax = cte.LonMax;
        LonMin = cte.LonMin;
    }
}
```

```
Skew = cte.skew;
ProjectionType = cte.ProjectionType;

Scale = cte.Scale;
edition_date = cte.edition_date;
file_date = cte.file_date;

nPlyEntries = cte.nPlyEntries;
nAuxPlyEntries = cte.nAuxPlyEntries;

nNoCovrPlyEntries = cte.nNoCovrPlyEntries;

bValid = cte.bValid;

if (nPlyEntries) {
    int npeSize = nPlyEntries * 2 * sizeof(float);
    pPlyTable = (float *)malloc(npeSize);
    is.Read(pPlyTable, npeSize);
}

if (nAuxPlyEntries) {
    int napeSize = nAuxPlyEntries * sizeof(int);
    pAuxPlyTable = (float **)malloc(nAuxPlyEntries *
sizeof(float *));
    pAuxCntTable = (int *)malloc(napeSize);
    is.Read(pAuxCntTable, napeSize);

    for (int nAuxPlyEntry = 0; nAuxPlyEntry < nAuxPlyEntries;
nAuxPlyEntry++) {
        int nfSize = pAuxCntTable[nAuxPlyEntry] * 2 *
sizeof(float);
        pAuxPlyTable[nAuxPlyEntry] = (float *)malloc(nfSize);
        is.Read(pAuxPlyTable[nAuxPlyEntry], nfSize);
    }
}

if (nNoCovrPlyEntries) {
    int napeSize = nNoCovrPlyEntries * sizeof(int);
    pNoCovrCntTable = (int *)malloc(napeSize);
    is.Read(pNoCovrCntTable, napeSize);

    pNoCovrPlyTable = (float **)malloc(nNoCovrPlyEntries *
```

```
sizeof(float *));
    for (int i = 0; i < nNoCovrPlyEntries; i++) {
        int nfSize = pNoCovrCntTable[i] * 2 * sizeof(float);
        pNoCovrPlyTable[i] = (float *)malloc(nfSize);
        is.Read(pNoCovrPlyTable[i], nfSize);
    }
}
}
```

.....

上面的代码使用wxInputStream从文件中读取一个ChartTableEntry_onDisk_17结构，ChartTableEntry_onDisk_17定义如下：

```
struct ChartTableEntry_onDisk_17
{
    int      EntryOffset;
    int      ChartType;
    float    LatMax;
    float    LatMin;
    float    LonMax;
    float    LonMin;

    int      Scale;
    int      edition_date;
    int      file_date;

    int      nPlyEntries;
    int      nAuxPlyEntries;

    float    skew;
    int      ProjectionType;
    bool     bValid;

    int      nNoCovrPlyEntries;
};
```

Write的实现类似，以ChartTableEntry_onDisk_version定义的结构写入文件chartlst.dat。

ChartDatabase类对已安装的海图进行管理，功能包括ChartTableEntry读、写和访问。例如：在SearchDirAndAddCharts函数中调用wxDir::GetAllFiles遍历海图文件夹下所有SENC文件，每一个SENC文件构建一个ChartTableEntry对象，存入ChartTable。ChartTable为ChartTableEntry的数组，定义如下：

```
WX_DECLARE_OBJARRAY(ChartTableEntry, ChartTable);
```